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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,243	07/17/2003	Ashish D. Alawani	0140111	2882

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FARJAMI & FARJAMI LLP
26522 LA ALAMEDA AVENUE, SUITE 360
MISSION VIEJO, CA 92691

EXAMINER	
LEVI, DAMEON E	

ART UNIT	PAPER NUMBER
2841	

DATE MAILED: 02/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/623,243	ALAWANI ET AL.	
	Examiner	Art Unit	
	Dameon E. Levi	2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 January 2005 RCE*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "leaded surface mount device"(claim 17) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, and 3- 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Greenwood US Patent 6338985.

Regarding claim 1, Greenwood discloses a module comprising:

a surface mount component situated over a substrate(for example, see elements 40,12, Figs1-10) said surface mount component comprising a first terminal and a second terminal(for example, see elements 44, Figs 1-10) ;

a first and a second pad situated on said substrate, (for example, see elements 24, Figs 1-10) said first pad being connected to said first terminal and said second pad being connected to said second terminal(for example, see elements 24,44 Figs 1-10),

a solder mask trench (for example, see trench space filled by elements 52, Figs 1-10) situated underneath said surface mount component, said solder mask trench formed within a solder mask(for example, see elements 36,38 Figs 1-10) wherein a bottom surface of said surface mount component and a top surface of said substrate form a moldable gap(for example, see elements 48, Figs 1-10) said moldable gap including said solder mask trench(for example, see elements 52, Figs 1-10), wherein said moldable gap and said solder mask trench facilitate a flow of a molding compound

underneath said surface mount component and wherein said solder mask trench is filled with said molding compound(for example, see elements 52, Figs 1-10).

Regarding claim 3, Greenwood discloses wherein said moldable gap is filled with said molding compound (for example, see elements 52, Figs 1-10).

Regarding claim 4, Greenwood discloses further comprising an overmold, said overmold being situated over said surface mount component (for example, see elements 54, Figs 1-10).

Regarding claim 5, Greenwood discloses wherein said surface mount component is selected from the group consisting of a resistor, a capacitor, an inductor, a diplexer, a diode, and a SAW filter (for example, see elements 40, Figs 1-10, see columns 1-7, wherein the reference states that the surface mount component is a semiconductor chip or die and would necessarily, at least, comprise a resistor etc.).

Regarding claim 6, Greenwood discloses wherein said moldable gap has a height of between approximately 45.0 micrometers and 65.0 micrometers (for example, see elements 48, Figs 1-10, see columns 1-7).

Regarding claim 7, Greenwood discloses wherein said overmolded module is an MCM(for example, see elements 40, Figs 1-10, see columns 1-7).

Regarding claim 8, Greenwood discloses wherein said substrate comprises a laminate circuit board(for example, see elements 12, Figs 1-10, see columns 1-7).

Regarding claim 9, Greenwood discloses a module comprising-.

a surface mount component situated over a substrate(for example, see elements 40,12, Figs1-10), said surface mount component comprising a first terminal and a second

terminal(for example, see elements 44, Figs 1-10); a first and a second pad situated on said substrate(for example, see elements 24, Figs 1-10) , said first pad being connected to said first terminal and said second pad being connected to said second terminal, (for example, see elements 24,44 Figs 1-10);

a moldable gap situated underneath said surface mount component, said moldable gap comprising a solder mask trench(for example, see elements 48, see trench space filled by elements 52 Figs 1-10) , said solder mask trench formed within a solder mask (for example, see elements 36,38 ,see trench space filled by elements 52 Figs 1-10) ;wherein said moldable gap and said solder mask trench facilitate a flow of a molding compound underneath said surface mount component and wherein said solder mask trench is filled with said molding compound(for example, see elements 52, Figs 1-10).

Regarding claim 10, Greenwood discloses wherein said moldable gap is filled with said molding compound (for example, see elements 52, Figs 1-10).

Regarding claim 11, Greenwood discloses further comprising an overmold, said overmold being situated over said surface mount component(for example, see elements 54, Figs 1-10).

Regarding claim 12, Greenwood discloses wherein said overmold comprises said molding compound(for example, see elements 54, Figs 1-10, see columns 1-7).

Regarding claim 13,Greenwood discloses wherein said moldable gap has a height of between approximately 45.0 micrometers and 65.0 micrometers(for example, see elements 48, Figs 1-10, see columns 1-7).

Regarding claim 14, Greenwood discloses wherein said surface mount component is selected from the group consisting of a resistor, a capacitor, an inductor, a diplexer, a diode, and a SAW filter (for example, see elements 40, Figs 1-10, see columns 1-7 wherein the reference states that the surface mount component is a semiconductor chip or die and would necessarily, at least, comprise a resistor etc).

Regarding claim 15, Greenwood discloses wherein said overmolded module is an MCM(for example, see elements 40, Figs 1-10, see columns 1-7).

Regarding claim 16, Greenwood discloses a module comprising:

a surface mount device situated over a substrate(for example, see elements 40,12, Figs1-10), said surface mount device comprising a plurality of terminals(for example, see elements 44, Figs 1-10);a plurality of pads situated on said substrate(for example, see elements 24, Figs 1-10), each of said plurality of pads being connected to a respective one of said plurality of terminals(for example, see elements 24,44 Figs 1-10); a solder mask trench situated underneath said surface mount device(for example, see elements 49, see trench space filled by elements 52 Figs 1-10),said solder mask trench formed within a solder mask(for example, see elements 36,38 ,see trench space filled by elements 52 Figs 1-10) ,wherein said solder mask trench facilitates a flow of a molding compound underneath said surface mount component and wherein said solder mask trench is filled with said molding compound(for example, see elements 52, Figs 1-10).

Regarding claim 17, Greenwood discloses wherein said surface mount device is a leaded surface mount device (for example, see elements 40, Figs 1-10, see columns 1-

7, wherein the solder bumps 42 are deemed by the Office as being leads for the device 40).

Regarding claim 18, Greenwood discloses wherein said surface mount device is a leadless surface mount device (for example, see elements 40, Figs 1-10, see columns 1-7).

Regarding claim 19, Greenwood discloses wherein said surface mount device comprises at least one component, said at least one component being selected from the group consisting of an active component and a passive component (for example, see elements 40, Figs 1-10, see columns 1-7).

Regarding claim 20, Greenwood discloses wherein said overmolded module is an MCM (for example, see elements 40, Figs 1-10, see columns 1-7).

Anderson et al discloses a leaded surface mount device (for example, see element 10, Figs 1-3).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dameon E. Levi whose telephone number is (571) 272-2105. The examiner can normally be reached on Mon.-Fri. (9:00 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (571) 272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dameon E Levi
Examiner
Art Unit 2841

DEL

PHUONG T. VU
PRIMARY EXAMINER